

# Assessing the Carpathian Ecoregion Initiative (CEI)

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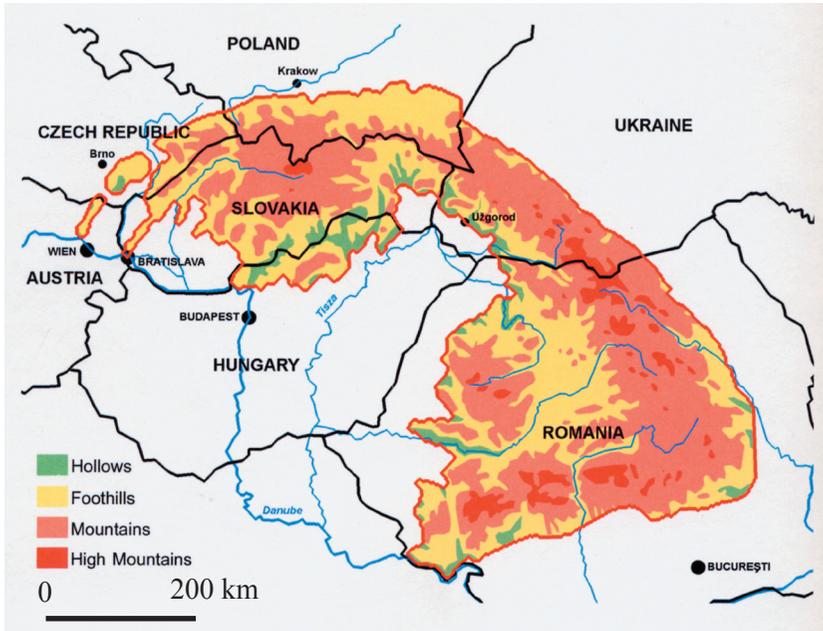
## Abstract

*In the 1990s the World Wide Fund for Nature (WWF) added a new ecoregional approach to its longstanding efforts to conserve nature. One of the areas that became an early focus of this approach was the Carpathian Mountain system, a lengthy multinational region of rugged peaks, rolling hills, valleys, forests, grasslands and diverse landscapes, in central and eastern Europe. This system is part of Ecoregion 77, the European-Mediterranean mixed forests. This is an assessment of work in that ecoregion up to spring 2002 through what is called the Carpathian Ecoregion Initiative (CEI). The assessment begins with an introduction to the Carpathian system, relying mainly on information collected by the CEI. This introduction is followed by sections on the origins of the CEI, the terms of reference and methods used in the assessment, the work schedule, the results, and recommendations for the future. Some observations are also made on recent research relating to planning theory and methods, as these apply to the CEI and other extensive ecoregional landscape and land-use planning projects. Overall, this assessment is intended to assist the CEI with its ongoing work and to be useful to others concerned with ecoregional and landscape planning work elsewhere in the world. This paper summarizes a longer report (Nelson, 2004).*

## Introduction

The Alps are undoubtedly the most renowned mountain system in Europe. Yet the lesser known Carpathians are worthy of equivalent, if not greater, recognition (CEI, 2001). This comparatively young (Tertiary) mountain system rises up to 2000 m north of Vienna on the Danube River and extends in a great 1500

km arc through the Czech Republic, Slovakia, Poland, Hungary, Ukraine, and Romania (Figure 1). The peak of the system is the high Tatras of Poland and Slovakia, with Mt. Gerlach at 2653 m above sea level. The width of the system is about 250 km in the northwest, 100 to 120 km in the Ukraine, and 340 km in the southeast, in Romania (Vološćuk, 1999: 9). Overall the Carpathians cover an area of about 210 000 km<sup>2</sup>, approximately five times greater than the area of Switzerland (Table 1).



**Figure 1.** *The Carpathian ecoregion (Source: CEI, 2001).*

According to *The Status of the Carpathians* (CEI, 2001), these uplands are central Europe's largest mountain range of global significance as a natural area. The mountains exhibit complex geology, magnificent scenery, vast tracts of forests and meadows, and a wealth of natural diversity (biodiversity) unparalleled in Europe (Figure 2 through Figure 5). The mountains also have a rich human history and cultural heritage reflecting thousands of years of human interaction with the land. One significant manifestation of this is the extensive high grasslands and meadows created by clearing upper level forests for sheep grazing since about the 15<sup>th</sup> century (Figure 2). These grasslands are now valued for their high biodiversity and are a focus of concern over forest and shrub encroachment following cessation of grazing in the last few decades.

**Table 1.** Carpathians facts and figures (Source: modified from CEI, 2001).

Total area	209 256 km <sup>2</sup>
Carpathian countries (% of Carpathians)	Romania (55%), Slovakia (17%), Ukraine (11%), Poland (10%), Hungary (4%), Czech Republic (3%), Austria (<1%)
Source of major rivers	Vistula, Drista, Prut, Aluta and numerous Danube tributaries including Tisza and Vag
Population	ca. 16-18 million
Main economic sectors	Agriculture, forestry, tourism, local industry, mineral exploration

The climate of the Carpathians varies from west to east. Maritime influences are stronger in the west, along with higher frequencies of cyclonic weather and storms. Continentality increases to the east, with distance from the moderating influence of the Atlantic, bringing decreases in precipitation and temperature. Mediterranean influences increase toward the south where a north-south seasonal shift in atmospheric pressure systems and weather patterns results in drier, hotter summers with more anticyclonic activity, and wetter, cooler winters with westerly winds and cyclonic storms. Elevation, topography, aspect, slope and other factors complicate these general climatic patterns. Broadly speaking, the mean July temperature in the western Carpathians is 19°C and in the southern Carpathians, 22°C. Precipitation generally falls from an annual average of 2000 mm in the west to 600 mm in the southeast.



**Figure 2.** Pieniny, Poland-Slovakia (Source: CEI, 2001).

A very general zonal framework of vegetation has been developed for the Carpathians, although biological conditions obviously vary considerably with soil, slope, bedrock, and other meso- or micro-conditions, as well as the effects of human activity.

The zonal framework or model is useful in giving a broad, albeit idealistic, frame of reference for forest and vegetation types in the Carpathians.

The zones in the framework are (Vološćuk, 1999: 10):

- oak (*Quercus*) (150-300 m);
- beech-oak (*Fagus-Quercus*) (300-500 m);
- oak-beech (*Quercus-Fagus*) (400-600 m);
- beech (*Fagus*) (550-750 m);
- fir-beech (*Abies-Fagus*) (700-1000 m);
- spruce-fir-beech (*Picea-Abies-Fagus*) (950-1300 m);
- spruce (*Picea*) (1250-1550 m);
- subalpine (*Pinus mugo* ssp. *pumillo*) (1500-1850 m);
- alpine, without woody plants (1850-2250 m); and,
- subival, higher plants are rare (2250 m).

The importance of the Carpathians as a catchment or source area for rivers flowing into more populated surrounding lands is generally described in the CEI reports and data. Ultimately 90% of the Carpathian waters are said to flow into the Black Sea and 10% into the Baltic. The Carpathians serve as source areas for the Vistula, the Tisza, the Prut, and other major streams of Poland, Hungary, the Ukraine, and Romania. Over one third of the flow of the Vistula reportedly originates in the Carpathians, which are also the source of 80% of Romania's freshwater resources if the Danube is excluded.



**Figure 3.** *The White Carpathians (Source: CEI, 2001).*

Some attention is given in the CEI reports to water quality, but less to flow regimes and flood and drought patterns through space and time. Largely as a result of their economic and social value, the Carpathian streams, lakes, and wetlands have been dammed, straightened and manipulated to reduce floods and increase naturally low flows in summer. Many reaches of the streams were dammed to produce water

power for industry, particularly during the Communist Era of 1948 to 1989.



**Figure 4.** *Belianske Tatry* (Source: CEI).

On a continent where close to 60% of the forest cover has been lost and only 2% of the remaining forest cover is protected, the Carpathians support

central Europe's most extensive tracts of forest between 950 and 1350 m above sea level. The Carpathians also support the largest remaining natural beech (*Fagus*) and beech-fir (*Fagus-Abies*) forest ecosystems and the largest area of relatively undisturbed forest left in Europe outside of Russia. Together with semi-natural habitats such as meadow pastures and hay meadows, which are the result of centuries of traditional management of the land, the Carpathians harbor a richness of natural diversity that again is unsurpassed in Europe outside of Russia. No less than one third of European vascular plants can be found in this region: 3988 plant species, 481 of which are found only in the Carpathians. The mountains form a 'bridge' between Europe's northern forests and those in the south and west, and as such are a vital corridor for the dispersal of plants and animals throughout Europe.

According to the CEI report entitled *The Carpathians, Kingdom of the Carnivores* (CEI, nd.), the Carpathians are the last region in Europe to support viable populations of Europe's greatest mammals. The European brown bear (*Ursus arctos arctos*), wolf (*Canis lupus lupus*), and lynx (*Felix lynx*) are all still to be found in the Carpathian forest. The European bison (*Bison bonasus*) is gone although efforts are being made to re-establish this animal, for example, in the Bieszczady Mountains.

In addition to their high natural diversity, the Carpathians also are significant because of their high national and ethnic diversity. They are home to diverse groups such as Czechs, Slovaks, Poles, Ukrainians, Moravians, Romanians, Walachs, Bohemians, Boykos, and others. Although this national and ethnic diversity is recognized in general terms in the work of the CEI, relatively little detail is given on the human dimensions of the Carpathians and surrounding ar-



**Figure 5.** *Piatra Craiului, central Romania (Source: CEI, 2001).*

areas which have a long and rich human history.

The Carpathians and surrounding regions are the site of significant Paleolithic discoveries dating back well into the Pleistocene. Extensive remains of Neolithic agricultural and mining

activities as well as former villages and settlements have also been found in the vicinity of the mountains. Archaeological and literary evidence points to widespread settlement and trade prior to and during Roman and later times. The Carpathians hold traces of the advance of Gothic and other peoples into and following the Roman Empire. The marks of invaders from the east, such as the Huns, the Magyars, the Mongols, and the Turks, have been left on this culturally rich landscape.

Penetration of the mountains appears to have deepened and intensified in the Middle Ages with Barons and noble families claiming extensive tracts for hunting, forestry, and other purposes. Grazing, mining, lumbering, and other activities accelerated in the mountains in the 1700s, 1800s, and early 1900s. With the rise of industrialization in the 19<sup>th</sup> century, railroads were constructed to mining and other centers in the Carpathians.

The Carpathians also became a contended zone between emerging empires and nations, especially in the 19<sup>th</sup> and 20<sup>th</sup> centuries. The borders of Prussia, later, Germany, the Austro-Hungarian Empire and its descendents, Poland, Russia, the Ukraine, the USSR, and Romania, advanced and retreated across the region. Under Soviet dominance after World War II, the eastern Carpathians were, for some years, a battleground among Poland, Ukraine, and the USSR. Large areas were depopulated. In many areas, grasslands and rural landscapes gave way to forests and wildland. Private lands were nationalized and operated as co-operative enterprises or as protected areas and hunting grounds for the elite of the Communist Party. Bears and other game were frequently fed with hunting in mind. In some areas, isolated high alpine settlements remained comparatively undisturbed. Under the Soviet regime the various Carpathians

countries lost much of their autonomy and were linked to Moscow. Trade and contact among the Carpathian countries were strictly controlled.

After the fall of the Berlin Wall and the Communist system in 1988-89, numerous hitherto repressed forces were unleashed including interest in recovering private property lost to the public or communal ownership of the Soviets. People began to reenter, reclaim, and reinhabit the mountains. Forests, wildlife, and animals began to change again. All this human history is significant from the standpoint of those who value cultural heritage and the understanding it gives us of the past, where we have come from, and where we might be going. However, this human history is also highly significant to those interested in the current state of the forests and landscapes of the Carpathians. Obviously these have changed in numerous ways many times over the centuries, often as a result of the long continued, yet fluctuating ideas and activities of humans.

## **The Origins of the Carpathians Ecological Initiative**

The Carpathians are one of the Global 200 ecoregions classified as endangered by WWF, this designation indicating that the ecoregion is considered highly significant from a biodiversity standpoint and is subject or potentially subject to high pressure from human development. In the late 1990s, staff of the WWF *Danube-Carpathian Project* in Vienna began discussing extension of Danube River work into the Carpathians, much of which is part of the Danube watershed. After some internal consultation within its office and WWF more generally, the decision was taken to launch an ecoregion program for the Carpathians. The development of the initial concept occurred between December 1988 and June 1999 and the program was implemented in 1999, 2000 and 2001.

The decision to do an assessment of the *Carpathians Ecoregion Initiative* (CEI) was taken by CEI staff in late 2001. The author was subsequently contracted to undertake the task. In December 2001 the author visited the Vienna office of the WWF-International *Danube-Carpathian Program* (DCP), which included the CEI coordinating unit, to discuss the process and terms of reference in some detail. As a result of the December meeting the author, the CEI coordinator, and the director of the Danube program, agreed to an assessment of the CEI although the assessment was not to include linkages with other senior organizations.

In the late stages of the assessment this limitation was associated with major difficulties in completing the work. Difficulties between the CEI and its umbrella office, the Austrian WWF, led to a cessation of CEI operations in spring 2002. This made it necessary to complete this assessment as a personal enterprise, which has been done largely because the CEI was emerging as a highly successful program up to the time of its cessation, one from which lessons can be drawn of value to others concerned with ecoregional planning elsewhere in the world.

## **The Assessment Methods**

The assessment methods included:

- reviewing existing documents from CEI, additional background from the WWF and other conservation organizations and the CEI website;
- attending several meetings of the CEI;
- preparation of a questionnaire for wide distribution among the CEI network in advance of fieldwork;
- field visits to the Czech and Slovak Republics, Poland, and Romania;
- personal interviews with selected people; and,
- assignment of a German speaking former member of the Austrian Foreign Service to assist with field work and other tasks.

After the completion of an outline report and a summary of field visits by February 28, 2002, the author and the CEI coordinator agreed that a draft report would be submitted by April 1, 2002 and a review workshop planned for May 15, 2002. A revised report was planned for June 1, 2002 with further feedback from sponsors of the study and a final report before the end of June.

## **The Theoretical or Conceptual Framework for the Assessment**

General theories that seem potentially applicable to the CEI assessment are rational or synoptic planning, mixed scanning, transactive planning, and in-

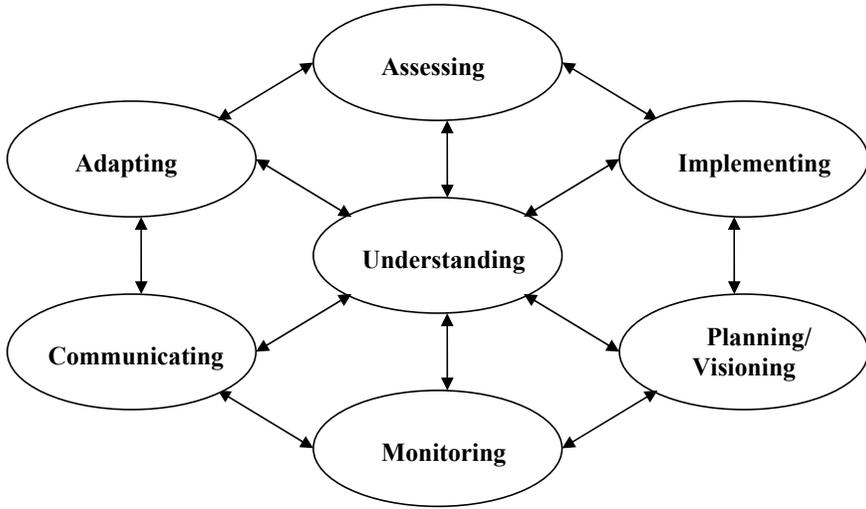
teractive and adaptive planning (Hudson, 1979; Nelson *et al.*, 2003). Rational planning tends to be exclusive rather than inclusive of other interests. Decisions on goals, objectives, resources, timelines and other essential details are made internally within the lead agency and these are carried forward with appropriate marketing, education and other programs to elicit support from the affected or general public.

The situation in which the CEI began was not really conducive to a rational planning approach. Much of the scientific and general knowledge was diffuse and uncertain. Nor did the originating group yet understand its goals, objectives, and interests well. It did not have the staff and resources to try to proceed in a relatively exclusive and direct manner to design and implement a program. Rather, the CEI involved building on the new and imperfectly defined notions of biodiversity conservation and the ecoregional approach. It involved beginning in a situation marked by considerable social, economic and political uncertainty. There were questions about how the CEI might be initially defined, who would support and work with such an evolving concept, whether the necessary knowledge and resources were available, and so forth.

In accordance with the foregoing thinking, this assessment of the CEI is based upon a set of principles or processes that underlie participatory, interactive, adaptive and civic planning. These seven processes are: understanding; communication; assessment; planning; management; monitoring; and adaptation (Nelson and Serafin, 1996; Dempster and Nelson, 2001; Nelson, 2003). All these processes are considered to be essential to an efficient, effective, and equitable planning approach. The processes are not thought of as proceeding in any logical or step-by-step sequence, but rather as working together in response to planning challenges. When a challenge presents itself, a planner generally tries, more or less simultaneously, to understand, communicate, assess, plan, manage, monitor and adapt to the situation in deciding how to deal with it. These essential processes were used as general criteria for analyzing and assessing the CEI (Figure 6). It is not possible to discuss the application of these processes in any detail in this paper. Those interested should consult the full assessment report (Nelson, 2004).

## **Brief Overview of CEI Planning Procedures**

The first stages of the CEI planning process involved lead staff in the Danube office collecting background information on relevant government and non-



**Figure 6.** A civics view of planning and decision-making (Source: Nelson and Serafin, 1994).

government activities in the Carpathians area and preparing a proposal for WWF-International. This led to an initial workshop May 9-10, 1999, in Hungary, involving participants from governments and NGOs of six Carpathian countries plus some WWF staff and consultants. Here a number of challenges were recognized but a range of participants from the Carpathians' area generally agreed to go ahead with a basic methodology, principles, and a proposal for funding which was prepared and submitted to WWF-Netherlands in June. At that time, WWF-US had embraced the ecoregional approach which was initially called *Ecoregion Based Conservation* (ERBC). WWF was developing EBRC in several exercises in different parts of the world. This approach was accepted by the participants in the initial workshop of the CEI. The idealized WWF methodology consisted of a series of basic steps: reconnaissance; biodiversity assessments; socio-economic assessments; a vision and/or conservation strategy; and action plans for application on the ground. Between July 1999 and approximately December 2001, the CEI undertook the first three of these steps generally guided by a timetable agreed upon by participants.

The CEI made numerous adaptations during the unfolding of the foregoing planning procedure. The biodiversity and socio-economic assessments were not done in sequence but rather by separate but interrelated groups working at the same time. This seems to have provided for more effective interaction

and exchange between the two groups. This interaction and the linking of the information was also enhanced by setting up a Geographical Information System (GIS) group to map the data so far as possible electronically. This, in turn, made it possible for the GIS group to analyze the biodiversity and socio-economic data in collaboration with the other groups and to identify 30 'Priority Areas for Biodiversity Conservation' which had high natural diversity values and were under pressure from transport, forestry, and other land use changes. The development of the GIS data and the maps was very challenging and laborious because of differences in data among the countries, varying levels of response to data requests, and other factors. The computer and analytical expertise and efforts of the Slovakia NGO Daphne were crucial in the completion of this work.

As the planning process proceeded, the CEI added two other working groups on Communications and Sustainable Development respectively. The CEI also established a framework for the necessary data collection and analysis on a cross-Carpathian or ecoregional basis. Country coordinators were selected for their general knowledge of each of the countries involved as well as expertise in a field such as biodiversity, socio-economic or GIS. Country coordinators with a broad background and visionary outlook served as members of the CEI Coordination or Steering Group (Samec, pers. com.). The country coordinators were also to recommend knowledgeable people in their countries who would be members of multinational working groups on biodiversity, socio-economics and communications.

## **Some Major Findings and Recommendations**

Only some of the more important findings and recommendations for the CEI program can be given here. In reviewing these, please note that they are based on the situation as it stood in spring 2002, when CEI operations ceased. A new version of the CEI started in 2003. This report represents the first public assessment of the initial version of the CEI.

The major accomplishments of CEI, up to spring 2002, can be summarized as follows:

- 1) Highlighting an alternative positive vision of the future for the peoples and wildlife of the Carpathians.

- 2) Completing, primarily through workshops and syntheses of existing knowledge, a series of interrelated wildlife, vegetation, and other studies which made it possible to delineate Priority Areas for Biodiversity Conservation in the Carpathians. In the process, the CEI and its collaborators began to build an ecoregional image of the Carpathians among scientists, scholars, professionals, politicians, other decision-makers and citizens in the countries involved and beyond.
- 3) Completing socio-economic studies that provided the basis for identifying land use pressures on the Priority Areas as well as contributing to ecotourism and other socio-economic activities with high potential for a role in sustainable development.
- 4) Planning and implementing a wide-ranging information strategy including a website, as well as information and training sessions, workshops, a CD-ROM, and other means of creating interest in and capacity for biodiversity conservation and sustainable development in the Carpathians region.
- 5) Introducing a small grants program to offer support and build capacity for biodiversity conservation and sustainable development at the local level.
- 6) Facilitating a growing network of government and non-governmental conservation organizations involved in biodiversity protection and restoration, and to varying degrees in cultural conservation and sustainable development.
- 7) Participating in the high level summit at Bucharest, Romania, in April 2002, where the countries of the Carpathians region reached a general agreement on an *Environmental and Sustainable Development Accord* for the Carpathians which could provide the basis for continuing the work begun in the *Carpathians Ecoregion Initiative*. This agreement in turn led to a May 2003 *Framework Convention on the Protection and Sustainable Development of the Carpathians*.

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## **Some Significant Practical Recommendations as of Spring 2002**

Recommendations fall into two broad categories, the more immediate and practical and the major adaptations needed in the longer term. The more practical recommendations include:

- 1) Historical analysis and mapping of all the major ethnic groups in the Carpathians in order to help clarify the range and diversity of impacts that they have had on cultural landscapes, vegetation, wildlife, and natural systems in different parts of the Carpathians historically, and so contribute to better understanding and improved planning for ways of life and both biodiversity and human heritage conservation today and in future.
- 2) Associated studies of the land-use history and landscape changes in the Carpathians to determine how past human use of the forests, for example, logging and mining, have affected ecosystems and biodiversity in various parts of the Carpathians today and what the implications and needs are for the future.
- 3) Comparative study of national parks and other protected areas in the various countries to determine their legal, policy and other capacities and lay the groundwork for working toward shared standards and approaches in the Carpathians. Similar studies are needed on land-use, natural resources, water, or other institutional arrangements bearing on biodiversity conservation and sustainable development in the Carpathians.
- 4) Establishing a cooperative approach to the small grants program among the various organizations involved in the CEI. Differences in ideologies, interests, and values need to be addressed in developing a widely useful and accessible program.
- 5) Listening to and speaking with local people and local governments, and anticipating their historic, current, and possible future roles in biodiversity conservation, is an urgent challenge for scientists and professionals which will require work and time to address efficiently, effectively and equitably. A workshop on the CEI for municipal planners and local administrators in the region is needed to increase comprehensive understanding of the CEI at this level.

- 6) Significant additional resources are needed for the CEI to continue into the next stage. A new office, distinct from the previous site, should be created, and additional staff should be taken on board.

## **Major Adaptation in Future**

Beyond such practical recommendations, major adaptations are desirable if the CEI is to proceed as well in the future as in the past. These adaptations in role, tasks, and relationships among cooperating organizations entail the following basic steps:

- 1) Recognizing WWF as the umbrella organization and a major funder of the CEI and other comparable ecoregional projects in various parts of the world, but with more careful planning and delegation of responsibilities in accordance with the natural, cultural, socio-economic, and other conditions peculiar to the Carpathians. In the project to date, the basic role of the CEI office was to serve as the cog in the wheel. The Vienna office was the hub of fundraising, communication, outreach, interaction, and planning. In the next phase more decentralization and delegation is required and the CEI office is better conceived of as the major unit or gear in an interrelated set of cogs and wheels. This arrangement has, in fact, already begun with the sharing of responsibility for GIS and related work with the NGO Daphne in Slovakia and responsibility for the Sustainable Development Working Group with the Environmental Partnership, Poland. Discussions are also underway to coordinate the small grants program with comparable initiatives of other organizations, one of which might be the prime mover.
- 2) Recognizing that the CEI project has the prime role in promoting the image of the Carpathians as an ecoregion among scientists, scholars, professionals and citizens. The CEI office would promote more specialized and comprehensive understanding of the Carpathians ecoregion through conferences, workshops, and other educational and media activities which would frequently be led by other allied organizations. In this context, the CEI office would also take a key coordinating role in organizing exchanges of scientists, scholars, professionals, youth, and citizens generally among communities in different parts of the Carpathians.

- 3) Recognizing that through WWF as an umbrella, the CEI project has a lead role in promoting, organizing, and monitoring research in biodiversity conservation and related fields in the Carpathians. This research would largely be cross-disciplinary and go beyond the specialized research already underway in various organizations and research bodies in the region. The universities in and around the Carpathians could play a much stronger role than they have in the past, perhaps through an *Association of Universities for Research on the Carpathians*. The CEI could undertake to promote such an association as well as applications and funding for related research and planning projects. The CEI could also serve as a depository for project proposals and research results in the Carpathians. Comparable organizations have been created in countries such as Canada, for example, the Association of Canadian Universities for Northern Studies and the Parks Research Forum of Ontario (e.g., Lemieux *et al.*, 2003).
- 4) Recognizing that the CEI needs to remain flexible, responding directly to or organizing collaborative responses to challenges and opportunities for biodiversity conservation throughout the Carpathians. In this respect CEI needs to be able to respond at different scales, ranging from the regional to the local as well as to the different needs and circumstances in various parts of the Carpathians. In the more eastern areas such as Romania, for example, CEI and WWF are said by residents to be needed as a political voice at both the national and local levels because relatively few NGOs are active in that country. This contrasts with the situation in the western part of the Carpathians where numerous NGOs are present and there is more need and opportunity for CEI and WWF to consult, coordinate and delegate. Also, throughout the Carpathians, there is a role for CEI in conflict resolution and in facilitating work with governments and especially businesses, which have had less attention to date.
- 5) Ultimately, the people and natural systems of the Carpathians are too complex, dynamic and challenging to encompass in an overall management plan in the form of a multi-year blueprint implemented through a number of specific action plans. This complexity, dynamism, and challenge is underlain by a set of historic, economic, social, and political relationships in the Carpathians that must be recognized as likely to have uncertain and long-lasting effects on the Carpathian countries as they all work independently and interactively toward a better future. Here CEI can play a key role in diffusing information and identifying common

interests and concerns among the diverse countries, organizations, and natural and human communities of the Carpathians region. This role, and the associated work of WWF and other national and international organizations, will however, have to involve greater recognition of the evolving indigenous efforts of Carpathian governments and people to steward and sustain environment and quality of life in the region, as for example through the new *Framework Convention on Conservation and Sustainable Development*.

## **On Emerging Theory and Method in Assessing Landscape and Ecoregional Planning**

More assessments are needed in landscape and ecoregional planning, and indeed, the broad field of land-use planning generally. Few ecoregional planning assessments have been undertaken so the results of this CEI assessment cannot be readily compared with others to build a broader base of theory, method and practice in the interests of greater efficiency, effectiveness and equity. The interactive and adaptive approach that has been used in this study has produced useful results that will be of interest to a wide range of parties concerned specifically about the CEI or, more broadly, about ecoregional or related landscape or land-use planning. The approach is worthy of serious consideration in future assessments of such planning. However, during this assessment some research was published on planning and associated theory and method that adds to the tools now at our disposal.

This new research is published in four recent special issues of *Environments: A Journal of Interdisciplinary Studies*. The first two issues were published in late 2002 and early 2003 under the titles of *Managerial Ecology: Contestation and Critique* (Bavington and Slocombe, 2002) and *Managerial Ecology: Counter-proposals* (Bavington and Slocombe, 2003). Numerous other relevant papers are included in *Collaborative Planning and Sustainable Resource Management: The North American Experience* (Gunton *et al.*, 2003a) and *Evaluating Collaborative Planning: The British Columbia Experience* (Gunton *et al.*, 2003b).

Many factors are identified in these papers that relate to, go beyond, or differ in detail from the process-oriented criteria used as a framework for assessment in this study of the CEI. These new criteria deserve careful consideration by those intending to evaluate or assess landscape or ecological planning pro-

grams and projects. Some challenges facing the effectiveness and future of collaboration in the United States include:

- roles and attitudes of agencies;
- leadership and support;
- skills, resources, and time;
- roles and attitudes of nongovernmental groups; and,
- incentives to participate (Yaffee and Wondolleck, 2003).

In this respect, Gunton *et al.* (2003a; 2003b) advance what they call “*ten keys to successful management of collaborative processes*”. These need to be considered in deciding on whether or not to use a collaborative approach, implementing it, and undertaking an evaluation of its program and projects.

The ten keys include:

- determining the suitability of a planning issue for collaborative planning;
- ensuring inclusive representation of stakeholders;
- providing clear ground rules;
- reducing inequities among stakeholders;
- ensuring accountability of the process;
- maintaining flexibility;
- providing effective process management;
- providing sufficient time – about four years – for a process to work;
- developing implementation and monitoring plans; and,
- using multiple-objective evaluation of the planning process.

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Many of the photos are published with permission of the CEI and are credited according to guidance from CEI. Whatever values this assessment has are due overwhelmingly to all who helped me. I am of course responsible for missteps in fact or important omissions. A number of these were avoided through a final review of the manuscript by Phil Weller and Sissi Samec in November 2003. I am especially mindful of all the help that the redoubtable Stephanie Janetos gave me in preparing my assessment report. Stephanie did so while completing work on her MA thesis on protected area research in Macedonia-Greece borderlands with the University of Waterloo. In spite of this pressure she was always gracious in her careful work on this report. Christina Rehbein also helped complete this paper and the published version of my full report (Nelson, 2004).

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